

# Compact Digital Orientation Module for Borehole Logging Tools

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## Abstract

© 2018 IEEE. This paper describes the one-board developed digital orientation system for borehole logging tools, based on FPGA, 3-axis magnetometer and 3-axis accelerometer. The FPGA usage be capable of highspeed measurements orientation parameters (23 Hz), which necessary for restoring the maneuver in 3-dimensional space of the logging tool with increased depth movement. In addition, the current system can work in conditions of the industrial temperature range. The system test results show the accuracy (up to 1 degree) in determining the azimuth and zenith of the well and logging tool.

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